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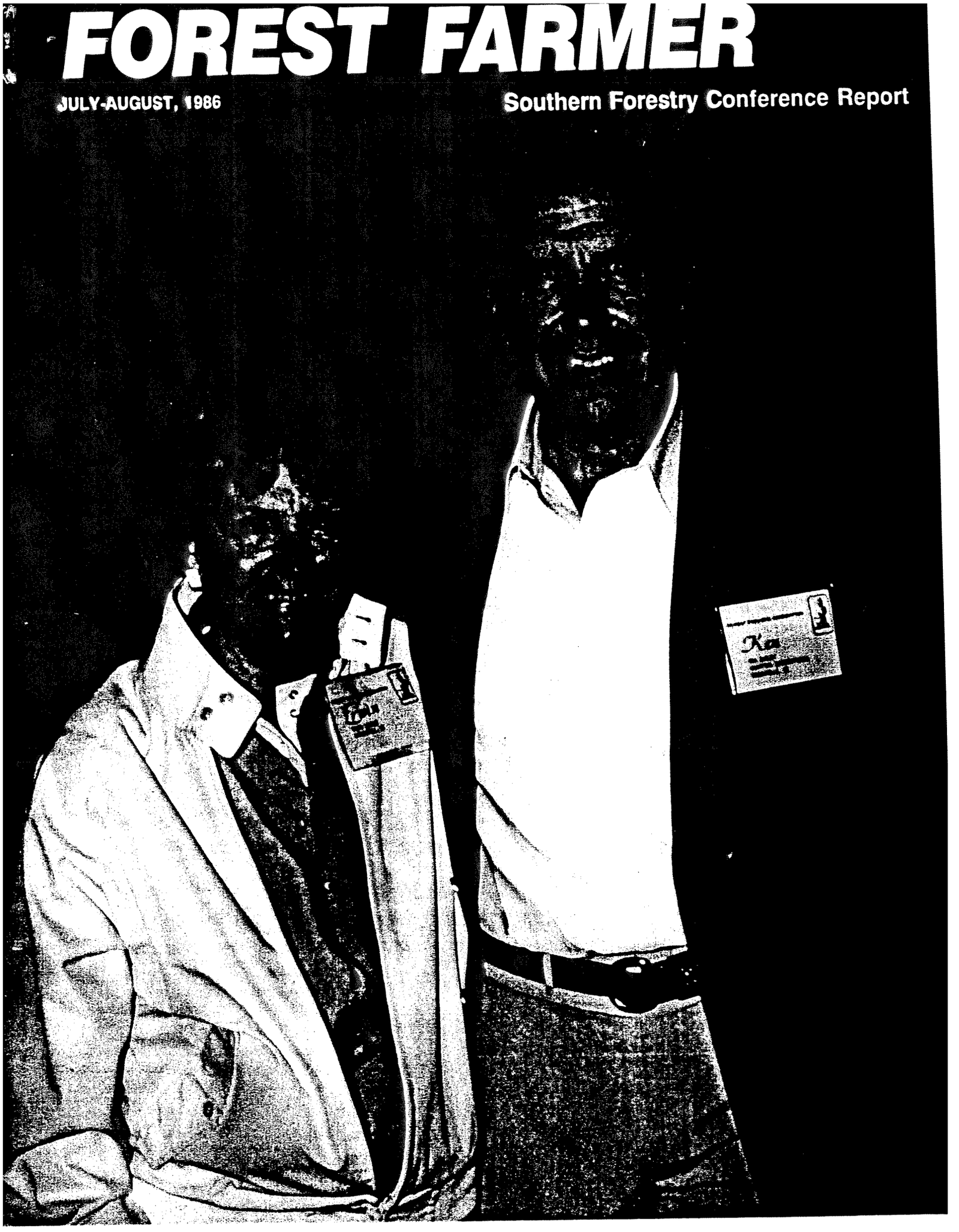

Sand Pine for Dry Sites

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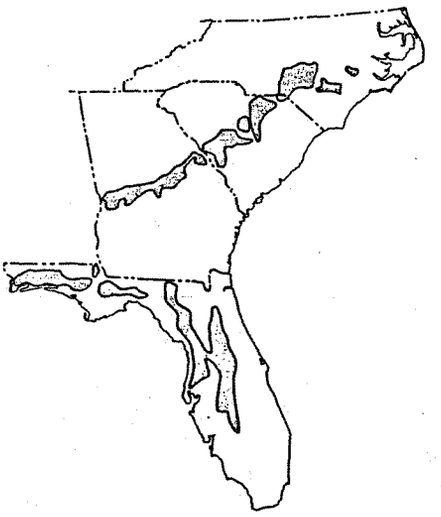

Scattered throughout the Southeastern Coastal Plain (see map above) of the United States are about 8 million acres of acid sands. These deposits are an important physiographic feature of central and northwest Florida. Sandhills also occupy significant areas of Georgia, South Carolina, and North Carolina in the zone between the Upper Coastal Plain and the Piedmont.

Sandhills soils are typically acid, infertile, and droughty. Many are quartz sands, ranging from a few to more than 20 feet deep. Because these soils are low in organic matter and clay content, nutrient and water retention are quite poor.

The sandhills were once dominated by relatively open stands of longleaf pine, but today only scattered patches of isolated longleaf pines remain. Most sites were taken over by scrub oaks, principally turkey oak, bluejack oak, and sandpost oak, and wiregrass following removal of the longleaf in the early 1900s.

Sand Pine

Sand pine, one of the minor southern pines, is native to the sandhills of Florida, and Baldwin County, Alabama. There are two varieties, which differ considerably in characteristics and habitat. The Ocala variety is concentrated in the center of Florida on an area of rolling sandhills known as the Central Highlands. Its cones persist on the tree for many years, storing large quantities of seed. Under natural conditions fire releases these seeds and dense stands of seedlings become established. Because of planting difficulties and losses to disease, the Ocala variety should not be used outside of its natural range.

The Choctawhatchee variety is found along the Gulf Coast of northwest Florida from the Apalachicola River westward into Alabama. It typically has open cones and does not respond to fire. With effective fire control, however, it will seed into and eventually take over adjoining scrub oak stands.

Extensive research by the Southeastern Forest Experiment Station, U.S. Forest Service has shown that sand pine is the most productive of 38 species of conifers that have been tested for sandhills reforestation. Although rated as moderately intolerant, when young sand pine is quite tolerant of shade and competition. It is one of the few species able to compete with the scrub oaks and grow at reasonable rates on sandhills sites.

Well-stocked plantations on average sites typically yield 30 cords per acre in pulpwood rotations of 25 to 35 years. Close-spaced plantings can produce 3.5 dry tons per acre per year of biomass. On the basis of such information, Choctawhatchee sand pine is being planted on an operational scale on sandhills throughout northwest Florida, and to a lesser extent in Georgia and South Carolina.

Establishment

Many forest farmers may be missing an opportunity to turn apparently useless sandhills into productive forest areas. Choctawhatchee sand pine can be established on these droughty sites quite easily by a number of different methods. Sites can be cleared of existing scrub vegetation by chopping with heavy, duplex brush chopper. A second chopping, about 6 months later, may be required to control oak sprouts if they are heavy. Chopping is the preferred method of mechahical site preparation because it gives good control of competition, and conserves nutrients by incorporating the organic matter into the soil.

Sites can also be prepared by application of brush-killing herbicides. These can be selectively applied to the larger scrub oaks — or broadcast over the site in pelletized form — by small, inexpensive hand tools either before or after seedlings are planted. All label directions on the herbicide should be followed carefully to avoid damage to the seedlings and the environment.

Choctawhatchee sand pine seedlings can be planted by hand or by machine after the site has been prepared. Deep planting is recommended, with seedlings set to a depth that results in the lower branches remaining covered after the soil settles. Planting densities for 25 to 35 year rotations should be 500 to 550 seedlings per acre if no thinning is planned, and 725 to 775 per acre of an intermediate thinning at about age 20 is anticipated. It is also possible in some areas to plant trees at the higher densities and thin the stand to about 500 trees per acre by selling some as Christmas trees at age 5 to 8 years. This can give the landowner some early return on their investment.

An economically attractive strategy for forest farmers, who may not be able or inclined to make a large investment in stand conversion, is underplanting Choctawhatchee sand pine seedlings among the existing vegetation. If the landowners do their own hand planting, the only cost is the seedlings. Sand pine will grow up through the existing scrub and take over much of the site, although it will take about 10 years longer for the trees to reach harvest size. Growth can be increased if larger oaks are cut to release the sand pine seedlings.

Wildlife & Aesthetics

Many landowners are more interested in wildlife production or aesthetics rather than growing timber on sandhill sites. Planting Choctawhatchee sand pine on these areas can increase such values. Seedlings can be established in two- or three-row strips or irregular patches.

This breaks up the scrub oak stand and adds diversity, a different type of habitat, and lots of edge where the conifers and hardwoods meet. These changes are beneficial to many species of wildlife and can be used to increase selected species or the total number of species present. Many people find the variation in vegetation more

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SAND PINE

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attractive as well.

Choctawhatchee sand pine begins producing seed at an early age — about 5 years — and is a fairly good seed producer. It is also quite aggressive and will establish seedlings on most available open areas within seedfall range. Therefore, after the initial stand has been established, Choctawhatchee sand pine can be successfully regenerated by either seedtree or shelterwood systems.

In both methods an initial cut is made to stimulate seed production, followed by a final harvest cut after adequate regeneration is obtained, normally in 5 to 10 years. After Choctawhatchee sand pine has been established on a site it can be regenerated by relatively simple and inexpensive methods. This allows the forest farmer to keep his forest attractive to wildlife and aesthetically pleasing.

Hazards

Like all trees, Choctawhatchee sand pine is susceptible to damage from insects, disease and fire. Bark beetles can be a problem after thinning or partial cutting. These operations should be conducted during the winter to minimize possible losses.

Some sanitation cuts to remove a few trees may be needed following lightning strikes or other injuries. Losses to root rot can occur if Choctawhatchee sand pine is planted off-site on poorly drained soils. These losses can be avoided by not planting on soils with less than 6 feet of sandy surface layers.

Because of its thin bark, sand pine is relatively susceptible to fire. Once trees are about 10 to 12 years old, however, fire will normally not be intense enough, because of the sparse understory, to damage a Choctawhatchee sand pine stand.

Application

Choctawhatchee sand pine is a very versatile species for sandhill sites. Forest farmers might consider it to increase timber production, stimulate wildlife and enhance visual appearance. Landowners also have many options for establishment and management depending on the amount of time and money available for investment. Possible systems range from low intensity ones like underplanting a few hundred seedlings by-hand and just letting them grow, to intensive systems of complete stand conversion by double chopping and machine planting followed by regular tending. The choice of a system depends on the individual landowner's objectives, but for almost all of those that have sandhills sites, Choctawhatchee sand pine can be a valuable addition. □